

ABSTRACT OF THE DISCLOSURE

Disclosed is an optimal high-speed multi-resolution retrieval method on a large capacity database capable of providing a retrieval speed sufficiently rapid to obtain a perfect retrieval accuracy, i.e., accuracy of 100%. The method provides an optimal high-speed retrieval algorithm for inducing an inequality capable of accurately determining effective clusters and ineffective clusters, and implementing an optimal high-speed information retrieval using the induced inequality, and an optimal high-speed retrieval algorithm for inducing an inequality based on a multi-resolution data structure for a high-speed processing, and implementing an optimal high-speed multi-resolution retrieval using the induced inequality. The method involves the steps of sorting all data contained in a database into a desired number of clusters each composed of data having similar features, deriving the lower bound of the distance between each cluster and a query, removing clusters having no possibility to be determined as best matches, searching, for best matches, data of clusters having the possibility to be determined as best matches, and inducing an inequality property based on a multi-resolution data structure for reducing unnecessary feature matching computation involved in a search procedure to reduce a large quantity of calculation.